WHAT IS CLAIMED IS:

1. A device for performing liquid phase microextraction of at least one analyte from an aqueous sample comprising a liquid membrane supported on a porous polymeric substrate, wherein said liquid membrane has one side that can be placed in fluid communication with the aqueous sample containing the at least one analyte and a second side that can be placed in fluid communication with an acceptor solution.

2. The device of claim 1, wherein said porous polymeric substrate is a hollow fiber.

3. The device of claim 1, wherein said liquid membrane comprises a fatty acid ester, a vegetable oil, a silicone oil, a nitroarylalkylether, or mixtures thereof.

4. The device of claim 3, wherein said fatty acid ester comprises an acyl chain comprising from 12 to 30 carbon atoms.

5. The device of claim 4, wherein said fatty acid ester comprises an ester portion comprising from 1 to 12 carbon atoms.

6. The device of claim 3, wherein the vegetable oil is soya oil, olive oil or tea tree oil.

7. The device of claim 3, wherein the alkyl portion of the nitroarylalkylether comprises from 5 to 30 carbons.

8. The device of claim 3, wherein the aryl portion of the nitroarylalkylether comprises from 5 to 20 carbons.

9. The device of claim 1, wherein the liquid membrane further comprises a carrier.

10. The device of claim 9, wherein the carrier is an organic ion, an ionophore or a pore forming agent.

11. The device of claim 10, wherein the carrier is an organic ion.

12. The device of claim 11, wherein the organic ion is trioctylphosphine oxide (TOPO), diethylhexyl phosphoric acid, triethylhexyl phosphoric acid, dodecylbenzene sulphonic acid, aliquat 336 (trioctylmethylammonium chloride), amberlite LA, tri-n-octyl amine, tetraphenylphosphonium, tetraphenylarsonium, trinitrophenol, and tetraphenylboron,

13. The device of claim 1, wherein said polymeric substrate comprises a polyolefin, acrylic copolymer, polyamide, polyester, polyurethane, polycarbonate, polystyrene, fluorinated polymer, polyvinyl chloride, polyacrylonitrile, copolymers thereof, or mixtures thereof.

14. The device of claim 13, wherein the polymeric substrate comprises a polyolefin.

15. The device of claim 14, wherein the polyolefin is polyethylene, polypropylene, polytetrafluoroethylene, poly(tetrafluoroethylene-co-ethylene), or polyethylene-polyvinyl chloride copolymer, copolymers thereof, or mixtures thereof.

16. The device of claim 1, wherein said liquid membrane is stable for at least 30 days, 60 days or 90 days.

17. The device of claim 2, wherein said hollow fiber is able to extract at least one analyte after being stored for at least 30 days, 60 days or 90 days.

18. The device of claim 1, wherein in operation, the acceptor solution is placed inside the hollow fiber and the hollow fiber is placed in the sample solution.

19. The device of claim 1, wherein the acceptor solution can be sampled by an autosampler.

20. A device for carrying out liquid phase microextraction of at least one analyte from an aqueous sample, said device comprising a hollow fiber comprised of a porous polymeric substrate and a liquid membrane supported thereon.

21. The device of claim 20, wherein said liquid membrane comprises a fatty acid ester, a vegetable oil, a silicone oil, a nitroarylalkylether, or mixtures thereof.

22. The device of claim 20, wherein said polymeric substrate comprises a polyolefin, acrylic copolymer, polyamide, polyester, polyurethane, polycarbonate, polystyrene, fluorinated polymer, polyvinyl chloride, polyacrylonitrile, copolymers thereof, or mixtures thereof.

23. The device of claim 22, wherein the polymeric substrate comprises a polyolefin.

24. The device of claim 20, wherein said liquid membrane is stable for at least 30 days, 60 days or 90 days.

25. A method of performing liquid phase microextraction of at least one analyte from a sample solution, comprising:

contacting the sample solution containing the at least one analyte with one side of a liquid membrane having two sides formed on a porous polymeric substrate, and

contacting an acceptor solution with a second side of the liquid membrane.

26. The method of claim 25, further comprising stirring the sample solution, the acceptor solution, or both solutions.

27. The method of claim 25, wherein the porous polymer substrate is a hollow fiber.

28. The method of claim 27, wherein the acceptor solution is contained within the hollow fiber.

29. The method of claim 27, wherein the sample solution is contacted with the liquid membrane by placing the hollow fiber in the sample solution.

30. The method of claim 25, wherein said polymeric substrate comprises a polyolefin, acrylic copolymer, polyamide, polyester, polyurethane, polycarbonate, polystyrene, fluorinated polymer, polyvinyl chloride, polyacrylonitrile, or copolymers thereof, or mixtures thereof.

31. The method of claim 30, wherein the polymeric substrate comprises a polyolefin.

32. The method of claim 31, wherein the polyolefin is polyethylene, polypropylene, polytetrafluoroethylene, poly(tetrafluoroethylene-co-ethylene), or polyethylene-polyvinyl chloride copolymer or copolymers thereof, or mixtures thereof.

33. The method of claim 25, wherein the sample solution is a biological sample or an environmental sample.

34. The method of claim 25, wherein the sample solution is prepared from a dispersion of any solid matter in aqueous solution, including soil, food, plant matter, fungal or bacterial matter, animal tissues, waste materials, or aqueous samples of dissolved airborne compounds.

35. The method of claim 33, wherein the biological sample is urine, plasma, blood, cerebrospinal fluid, lymph, gastrointestinal fluids, sweat, tears, mucous secretions, or cell culture fluid.

36. The method of claim 33, wherein the environmental sample is condensed water, surface water, ground water, rain water, river water, sea water, lake water, effluent water, influent water, or drinking water.

37. The method of claim 25, wherein said liquid membrane comprises a fatty acid ester, a vegetable oil, a silicone oil, a nitroarylalkylether, or mixtures thereof.

38. The method of claim 25, wherein said liquid membrane is stable for at least 30 days, 60 days or 90 days.

39. The method of claim 27, wherein said hollow fiber is able to extract at least one analyte after being stored for at least 30 days, 60 days, or 90 days.

40. A method for preparing a liquid membrane on a porous polymeric substrate for performing liquid phase microextraction, comprising the step of:

applying an organic phase comprising a fatty acid ester, a vegetable oil, a silicone oil, a nitroarylalkylether, or mixtures thereof to a porous polymeric substrate to form a liquid membrane on said porous polymeric substrate.

41. The method of claim 40, wherein said porous polymeric substrate is in the form of a hollow fiber or a sheet.

42. The method of claim 40, further comprising removing excess organic phase.

43. The method of claim 42, wherein the excess organic phase is removed by sonicating or rinsing the porous polymeric substrate.

44. A method for preparing a device for performing liquid phase microextraction comprising applying an organic phase comprising a fatty acid ester, a vegetable oil, a silicone oil, a nitroarylalkylether, or mixtures thereof to a porous polymeric substrate to form a liquid membrane on said porous polymeric substrate.

45. The method of claim 44, wherein said porous polymeric substrate is in the form of a hollow fiber or a sheet.